

## Abstract

It is an object of the present invention to provide a radio communication medium processor having a stable performance that does not receive a limitation for an installed place, especially, the influence of a metallic structure, does not need to adjust the resonance frequency of an antenna or an impedance, is excellent in its compactness and extensibility upon installation and strong for unnecessary noise from a periphery. In electric current fed loop antenna units, non-electric current fed loop antenna are arranged in doughnut shapes outside the substantially same planes of electric current fed loop antennas so as to surround the electric current fed loop antennas. Thus, when non-electric current fed loop antenna units are installed linearly, in radial directions and in arrays adjacently to electric current fed loop antenna units, the influence of the non-electric current fed loop antenna units to the antenna characteristics of the electric current fed loop antenna units can be suppressed. When the non-electric current fed loop antenna units are extended and increased, the antennas of the electric current fed loop antenna units do not need to be adjusted.